Claims

1. A document of value (1), such as a paper of value, ID card or the like, having at least one authenticity feature (3) in the form of a luminescent substance, the luminescent substance (3) having particles consisting of a dye-laden molecular sieve whose structure forms an optical resonator in which at least one dye can be excited to show stimulated emission, the dye being incorporated in the cavities of the molecular sieve or located in or on the internal and external surfaces of the molecular sieve and the transition to stimulated emission being accompanied by a detectable change in the luminescent properties of the dye.

2. A document of value (1) according to claim 1, characterized in that the luminescent substance (3) has different particles consisting of different dye-laden molecular sieves.

3. A document of value (1) according to claim 1 or 2, characterized in that molecular sieves with a channel structure, e.g. from the classes of aluminophosphates, are used.

4. A document of value (1) according to at least one of claims 1 to 3, characterized in that the dye molecules from the class of laser dyes are used.

5. A document of value (1) according to at least one of claims 1 to 4, characterized in that the spectral properties of the dye are adjusted by selection of the end groups.

6. A document of value (1) according to at least one of claims 1 to 5, characterized in that the molecular sieve has different excitable dyes.

7. A document of value (1) according to at least one of claims 1 to 6, characterized in that the document of value (1) has a further authenticity feature.

8. A document of value (1) according to claim 7, characterized in that the second authenticity feature is a further luminescent material which preferably has the same body color as the luminescent substance.

9. A document of value (1) according to at least one of claims 1 to 8, characterized in that the luminescent substance (3) is present in the volume of the document of value (1).

10. A document of value (1) according to at least one of claims 1 to 8, characterized in that the luminescent substance (3) is admixed to a printing ink.

11. A document of value (1) according to claim 10, characterized in that the printing ink is applied in the form of a coding, in particular a bar code.

12. A document of value (1) according to claim 10 or 11, characterized in that the printing ink with the luminescent substance is surrounded by a second printing ink with a further luminescent substance.

13. A document of value (1) according to at least one of claims 10 to 12, characterized in that the printing ink is applied at least in certain areas to the document of value (1) or to a carrier connected with the document of value (1).

14. A document of value (1) according to at least one of claims 1 to 8, characterized in that the luminescent substance (3) is disposed in or on a security element (2) connected with the document of value.

15. A security element (2) having at least one authenticity feature (3) in the form of a luminescent substance, the luminescent substance (3) having particles consisting of a dye-laden molecular sieve whose structure forms an optical resonator in which at least one dye can be excited to show stimulated emission, the dye being incorporated in the cavities of the molecular sieve or located in or on the internal and external surfaces of the molecular sieve, and the transition to stimulated emission being accompanied by a detectable change in the luminescent properties of the dye.

16. A security element (2) according to claim 15, characterized in that the security element (2) has at least one carrier material in the volume or on the surface of which the luminescent substance (3) is disposed.

17. A security element (2) according to claim 15 or 16, characterized in that the security element (2) has the form of a strip, band or label.

18. A method for marking products whereby the product is provided with a luminescent substance having particles consisting of a dye-laden molecular sieve whose structure forms an optical resonator in which at least one dye can be excited to show stimulated emission, the dye being incorporated in the cavities of the molecular sieve or located in or on the internal and external surfaces of the molecular

sieve, and the transition to stimulated emission being accompanied by a detectable change in the luminescent properties of the dye.

19. A method for checking a luminescent substance having particles consisting of a dye-laden molecular sieve whose structure forms an optical resonator in which at least one dye can be excited to show stimulated emission, the dye being incorporated in the cavities of the molecular sieve or located in or on the internal and external surfaces of the molecular sieve, and the transition to stimulated emission being accompanied by a detectable change in the luminescent properties of the dye, the line narrowing and line shift and/or the threshold behavior and/or the shortening of the lifetime being used as an authenticity feature.

20. Use of dye-laden molecular sieves showing stimulated luminescence without an external resonator for marking products.